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August 27, 2020

Mr. Ralph Oborn
Idaho Department of Environmental Quality
444 Hospital Way, Suite 300
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Subject: 2019 Annual Report for Habitat Management and Environmental Monitoring at the Smoky Canyon Mine Tailings Impoundments

Dear Ralph,

This submittal by the J.R. Simplot Company provides the *2019 Annual Report for Habitat Management and Environmental Monitoring at the Smoky Canyon Mine Tailings Impoundments*. The Stantec letter report for the brood/nest surveys is included as Appendix B of this report.

Please contact Ron Quinn (208-873-3720) or me with any questions.

Sincerely,
J.R. Simplot Company

A handwritten signature in blue ink, appearing to read "Chad Gentry", with a stylized flourish extending to the right.

Chad Gentry
Mine Manager

Enclosure

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2019 Annual Report

Habitat Management and Environmental Monitoring at the Smoky Canyon Mine Tailings Impoundments

August 2020

Prepared for:



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Prepared by:



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LIST OF ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
AOC	Administrative Order on Consent
BERA	Baseline Ecological Risk Assessment
BMPs	Best Management Practices
CEMPP	Comprehensive Environmental Monitoring Program Plan
COPCs	Chemicals of Potential Concern
EE/CA	Engineering Evaluation/Cost Analysis
FSPS	Field-Scale Pilot Study
IDEQ	Idaho Department of Environmental Quality
IDL	Idaho Department of Lands
IDWR	Idaho Department of Water Resources
MDL	Method Detection Limit
mg/L	milligrams per liter
NWP	Nationwide Permit
RI/FS	Remedial Investigation/Feasibility Study
SI	Site Investigation
T/E	Threatened/Endangered
TP1	Tailings Pond 1
TP2	Tailings Pond 2
TP-2TD	TP2 Toe Drain
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The J.R. Simplot Company (Simplot) owns and operates the Smoky Canyon Mine in southeastern Idaho (Figure 1-1). In January 2003, Simplot entered into an Administrative Order on Consent (AOC) with U.S. Department of Agriculture Forest Service (USFS), U.S. Environmental Protection Agency (USEPA), and Idaho Department of Environmental Quality (IDEQ) to investigate the potential environmental effects of phosphate mining and milling operations at the Smoky Canyon Mine and in the immediate vicinity (USFS, USEPA, and IDEQ 2003). The AOC provides a mechanism to address environmental conditions resulting from past mining activities that represent a risk to human health or the environment.

The AOC divides the mine into two areas of study: Area A and Area B (Figure 1-2). Area A is the area of historical mineral extraction from federal lands for which a Site Investigation (SI) and Engineering Evaluation/Cost Analysis (EE/CA) were conducted and a Remedial Investigation/Feasibility Study (RI/FS) is currently in progress. Area B is the Smoky Canyon Mine tailings disposal area, which is located on Simplot-owned property in Tygee Valley just east of Area A. IDEQ is the Lead Agency for the Area B environmental investigations, which occur solely on privately-owned lands, and USEPA and U.S. Fish and Wildlife Service (USFWS) are Federal Support Agencies (collectively referred to as the Agencies). Idaho Department of Lands (IDL) and Idaho Department of Water Resources (IDWR) are State Support Agencies for adopting any newly developed management practices or operational/design modifications through the jurisdictional amendment process for the Reclamation Plan and Dam Abandonment Plan, respectively. Area B activities are conducted separately from Area A due to the different operational monitoring and permitting requirements of the tailings disposal area.

The two Area B tailings impoundments, Tailings Pond 1 (TP1) and Tailings Pond 2 (TP2), are currently active and are expected to remain active until mining is completed at Smoky Canyon Mine. TP1, the older of the two impoundments, was used for tailings disposal from 1983 to 1991 and is currently used as a reservoir for storing mill water. TP2 has been in use since 1991 and will be used for tailings disposal through the life of the mine. In 2017, the toe of the TP2 dam was widened and the embankment was raised to allow for storage of a larger volume of tailings (Golder 2017). The tailings settle out in TP2 and the water is pumped to TP1. The water is then pumped back to the mill for use as process water, as needed. Tailings water is also land applied north of TP2 in accordance with the Tailings Water Reuse Plan of Operations (HDR 2018). Water also enters the impoundments from direct precipitation, runoff from the mill site and surrounding areas, from pumping of the Industrial Well, and from the Roberts Creek drainage. There is no direct discharge from the impoundments to surface drainages.

The Area B investigation activities were documented in a Groundwater and Environmental Media Investigation Report (MFG 2003a), a Baseline Ecological Risk Assessment (BERA) Report (MFG 2003b), and a Final Tailings Impoundment Recommendations Report (2004 Recommendations

Report) (MFG 2004). The 2004 Recommendations Report combined the findings of the Groundwater and Environmental Media Investigation with the Area B BERA and provided recommendations regarding the ongoing operation and maintenance of the impoundments and modification of the closure and reclamation plans. Subsequently, Simplot submitted a Draft Revised Operations and Abandonment Plan for the Smoky Canyon Mine Tailings Impoundments (2005 Revised Plan) in February 2005 (NewFields 2005), and an amendment to the 2005 Revised Plan (2014 Amendment) in March 2014 (Formation 2014). The 2014 Amendment included a revised Reclamation Plan based on results of the Tailings Revegetation Field-Scale Pilot Study (FSPS) (Formation 2013). Simplot made additional revisions to the Operations and Abandonment Plan based on Agency acceptance (August 2017) of proposed resolutions to Agency comments on the 2005 Revised Plan and 2014 Amendment. The 2018 Revised Operations and Abandonment Plan for the Smoky Canyon Mine Tailings Impoundments (2018 Operations and Abandonment Plan) was submitted in October 2018 (Formation 2018b) and supersedes the 2005 Revised Plan and 2014 Amendment.

As required by Section 3 of the 2018 Operations and Abandonment Plan, an Annual Report (this report) detailing best management practices (BMPs) and environmental monitoring activities conducted during the previous calendar year is submitted to the Agencies annually. Environmental monitoring activities are conducted at the tailings impoundments to satisfy requirements of the Section 404 Permit (Nationwide Permit [NWP] No. 071-OYC-4-003253 and Modification No. 2) and to address Area-Wide risk management goals and Site-specific recommendations (MFG 2004) developed as a result of the AOC investigations (MFG 2003a, MFG 2003b). BMPs and monitoring activities to be conducted during operation of the impoundments were originally summarized in the Operations Action Matrix of the 2005 Revised Plan (NewFields 2005) and 2014 Amendment (Formation 2014). Specifications for some of those activities have been modified over time, with approvals from IDEQ and the Support Agencies. The current version of the Operations Action Matrix is presented as Table 1-1 of this report. This Annual Report details the BMPs (Section 2) and environmental monitoring activities (Section 3) conducted in 2019.

2.0 BEST MANAGEMENT PRACTICES

The Area B BERA (MFG 2003b) concluded that adverse effects of selenium to resident waterfowl are possible; however, broader ecological risk appears to be minimal, especially when the limited potential for adverse effects on populations are considered. Based on the findings of the BERA, two additional environmental monitoring actions were required as specified in the 2004 Recommendations Report (MFG 2004):

- Actions to reduce and control the presence of shoreline nesting habitat available to waterfowl.
- Monitoring to demonstrate that the actions taken have effectively discouraged nesting by the resident waterfowl population.

Monitoring activities designed to provide data needed to fulfill these objectives are specified in the 2018 Operations and Abandonment Plan (Formation 2018b) and summarized in the Operations Action Matrix (Table 1-1).

2.1 On-the-Ground Vegetation Surveys

As specified in the 2018 Operations and Abandonment Plan, Simplot is required to conduct on-the-ground vegetation surveys annually (Table 1-1). The goal of the surveys is to revisit areas that had been scraped and/or sprayed in previous years to document the current conditions, and to note areas that may need additional herbicide application to eliminate vegetation that could be attractive to nesting birds (e.g., cattails, tall grasses along shoreline, etc.). The current shoreline was surveyed by Simplot's contractor in 2019 to identify potential habitat areas requiring herbicide application and/or physical vegetation removal. No habitat areas were identified for removal.

2.2 Brood Count Monitoring and Nesting Location Scoping

As required in the 2018 Operations and Abandonment Plan and summarized in the Operations Action Matrix (Table 1-1), nest surveying efforts (brood count monitoring and nesting location scoping, including general waterfowl/avian use of the impoundments) by wildlife biologists should occur during the nesting season for three years, and then once every five years for the life of the impoundments.

The initial survey was conducted in Fall 2006, and the three annual surveys were conducted in Spring 2007, Spring 2008, and Spring 2009, as described in the Final 2008–2009 Annual Report (Formation 2010). The first 5-year survey was conducted in 2014 by Simplot staff to count nests and broods and identify nesting vegetation for implementation of control measures (Formation 2015b). Because the survey conducted in 2014 was not completed by a qualified wildlife biologist,

Simplot's contractor conducted an additional nesting location scoping survey in spring 2015. Details of the 2015 survey are provided in the Final 2015 Annual Report (Formation 2017).

The second 5-year survey was conducted in 2019 by two Stantec Consulting Services Inc. (Stantec) wildlife biologists. Nest/brood surveys were completed around TP1 and TP2 on June 4 and 5, 2019 (Stantec 2019). Four nesting locations were identified and are shown on Figure 2-1. Two nests were active and two were inactive. During the 2019 survey, an active American wigeon (*Mareca americana*) nest and active mallard (*Anas platyrhynchos*) nest were identified. Two unoccupied Canada goose (*Branta canadensis*) nests were also identified. The results of the 2019 survey are documented in the Nest/Brood Count Surveys Letter Report (Stantec 2019), and is provided in Appendix B.

The 2019 nest/brood survey showed a decrease in nesting sites compared to the 2015 survey (Formation 2017). Seven nests were observed in 2015, including five active Canada goose, one inactive Canada goose, and one eared grebe (*Podiceps nigricollis*) nest. As stated in the Stantec report, fewer nest sites were found during the 2019 surveys than during the 2014 surveys (14 nests in 2014 vs. 4 nests in 2019). Stantec (2019) noted that the water level of the tailings impoundments was several feet higher than during previous surveys, and because of the high-water level, mud flats were not present within the impoundments. The northeast dam of TP2 was nearly devoid of vegetation within the large rocks, in contrast to 2014 survey photos that showed an abundance of grasses and forbs.

In addition to nests, a total of five broods (four Canada geese and one mallard) were also documented during the 2019 survey. Other bird species were observed within or immediately adjacent to the survey area (refer to Table 3 in Appendix B), but nests or broods of these species were not identified within the survey area. Numerous pairs of waterfowl (primarily ducks) as well as shorebirds (Wilson's phalarope, spotted sandpiper, and American avocet) were observed using the tailings impoundments. Stantec (2019) indicated that, given the late spring weather conditions in 2019, some of these waterfowl and shorebirds may nest in the vicinity of the impoundments later in the season.

Site Supervisors are required by Simplot to specifically document any waterfowl nests or threatened/endangered (T/E) species observed at the impoundments in the Wildlife Monitoring section of the BMPs Inspection Form ("Environmental and Best Management Practices Effectiveness Monitoring"). The completed forms for 2019 were reviewed and no T/E species were reported. Copies of the Inspection Forms are maintained at the mine for Agency review.

2.3 2019 Habitat Elimination

Actions are taken annually to reduce and control the presence of shoreline nesting habitat available to waterfowl (Table 1-1). As described in Section 2.1, no areas of potential habitat were identified for removal along the shoreline of TP1 and TP2. The margins of TP1 have a more

extensive and developed vegetation community with the potential for waterfowl nesting than the margins of TP2. This difference is because the TP1 footprint has been static for several years while the TP2 footprint has been increasing in response to tailings input, and the TP2 margins have been scraped and graded as the footprint area has increased. In general, plant diversity around the impoundments is low, with the herbaceous vegetation dominated by beaked sedge (*Carex utriculata*) and Baltic rush (*Juncus balticus*) at the water edge, and grasses such as tufted hairgrass (*Deschampsia cespitosa*), smooth brome (*Bromus inermis*), and foxtail barley (*Hordeum jubatum*) farther from the soil/water interface. Woody vegetation is sparse with scattered willow (*Salix* spp.) and a few individual aspen trees (*Populus tremuloides*).

In 2019, Simplot's contractor, Bitter Creek Pest Control (Bitter Creek), spot-treated habitat areas along the TP1 and TP2 shorelines with Milestone® (USEPA registration number 62719-519; rate of 7 oz. per acre) and Opensight® (USEPA registration number 62719-597; rate of 3.3 oz. per acre) as shown on Figure 2-2. The target vegetation included musk thistle (*Carduus nutans*), Canada thistle (*Cirsium arvense*), dyer's woad (*Isatis tinctorial*), houndstongue (*Cynoglossum officinale*), black henbane (*Hyoscyamus niger*), mullein (*Verbascum*), yellow toadflax (*Linaria vulgaris*), perennial pepperweed (*Lepidium latifolium*), and leafy spurge (*Euphorbia esula*). The shoreline vegetation is predominantly upland vegetation as a result of increasing water levels in the tailings impoundments.

2.4 Camera Monitoring

Although not required, Simplot installed three automatic cameras at the tailings impoundments in 2019 to record ice conditions and seasonal use of the impoundments by waterfowl. The cameras were deployed at locations shown on Figure 2-3. Note that camera directions are approximate and camera sightlines may shift direction over time due to weather conditions and/or wildlife. The automatic cameras are equipped with light sensors and were programmed to take one photograph per hour from 6am until 6pm. The cameras are removed, serviced (e.g., seals replaced, batteries charged), and stored during the winter months and then reinstalled the following year.

Selected 2019 photographs are included in Appendix A. In addition to the photographs obtained from the established cameras, photographs taken by Simplot mine personnel at the tailings impoundments also help to document conditions throughout the year. These photographs provide useful information about the condition of vegetation at the shoreline near the cameras, as well as the presence, abundance, and types of waterfowl at the tailings impoundments through time.

In 2019, ice melt occurred at the impoundments during mid-May. Ice melt typically occurs between the end of March and beginning of June, depending on spring temperatures and the timing and quantity of spring precipitation. Ice began to form on the impoundments in late October and they were completely frozen by late November 2019.

2.5 Predator Decoys

During a meeting with USFWS on April 14, 2014, Agency personnel recommended the placement of multiple predator (coyote) decoys around the tailings impoundments, particularly where nesting is most heavily concentrated. The Agencies also recommended that decoys/deterrents should be moved to different locations around the impoundments on a weekly to biweekly basis to avoid the waterfowl becoming habituated to them.

As recommended, coyote decoys were placed at the impoundments on May 13, 2019. The decoys (three to five at a time) were moved about every three weeks throughout the summer. All decoys were removed by October 21, 2019. Decoy locations are depicted on Figure 2-3. No visible effects on nesting/use of the area were observed by Simplot personnel. Simplot is uncertain about the usefulness of the decoys but will continue to deploy them in the spring and move them throughout the summer. Any useful observations or qualitative assessments of their efficacy (e.g., photographs of birds using [or not using] areas around the decoys) will be included in future reports.

3.0 ENVIRONMENTAL MONITORING

The Groundwater and Environmental Media Investigation (MFG 2003a) focused on characterization of tailings and water in the tailings impoundments and the fate and potential transport of tailings constituents, especially selenium and the other chemicals of potential concern (COPCs). That investigation indicated that COPCs were not being released from the impoundments at measurable levels and existing transport pathways had no observable effect on either surface water or groundwater quality downstream or downgradient of the tailings impoundments (MFG 2003a).

In addition to the existing monitoring requirements in the Section 404 Permit, the Groundwater and Environmental Media Investigation added two environmental monitoring actions, as specified in the 2004 Recommendations Report (MFG 2004). The objectives of the two additional monitoring actions are to:

- Track conditions at the impoundments during their ongoing use for tailings disposal by monitoring the effect of water-level elevation on water quality; and
- Identify changes in water quality that may be indicative of releases from the impoundments through periodic chemical characterization of tailings.

Monitoring activities designed to provide data needed to fulfill these objectives are summarized in the Operations Action Matrix (Table 1-1).

3.1 Water Quality Monitoring

Water quality monitoring activities and results for 2019 are discussed in this section, along with general comparisons to data from previous years.

3.1.1 Surface Water

Water from the TP2 toe drain location (TP-2TD) was sampled in March, May, August, and November 2019 (Figure 3-1). TP-2TD is at the base of the TP2 dam and represents seepage water from the high-permeability alluvial materials used below the dam. There is no direct discharge from the impoundments to surface drainages. The sampling was coordinated with quarterly or semiannual water quality monitoring activities performed by Simplot mine personnel or Simplot's contractor. The TP2 toe drain samples were submitted for analysis of the parameters specified in the Section 404 Permit (sodium, chloride, specific conductance) and the Comprehensive Environmental Monitoring Program Plan (CEMPP) (Formation 2015a) (dissolved cadmium and total selenium). Monitoring of dissolved cadmium and total selenium concentrations provide additional indicators of changes in surface water quality that may be related to a release from the tailings impoundments.

Table 3-1 presents the 1998–2019 chemical data collected at the TP2 toe drain. The data collected in 2019 indicate that total and dissolved selenium concentrations in surface water at the toe drain varied seasonally, but were less than the Idaho surface water quality criterion for aquatic life of 0.0031 milligrams per liter (mg/L) in all months except for May. The May total and dissolved selenium concentrations were 0.0035 and 0.0037 mg/L, respectively. The total and dissolved selenium concentrations measured in 2019 were similar to historical results.

Cadmium was not detected at concentrations above the minimum detection limit (MDL) of 0.000063 mg/L. Cadmium concentrations at the TP2 toe drain have remained essentially unchanged since the Groundwater and Environmental Media Investigation in 2002, and the concentrations are below the surface water quality criterion (0.0006 mg/L) (Table 3-1).

Sodium and chloride concentrations were somewhat variable in 2019 but remained consistent with past observations at the TP2 toe drain (Table 3-1). Chloride concentrations at TP2 toe drain ranged from 76.5 to 109 mg/L in 2019 and were generally comparable to concentrations reported since construction of the impoundment in 1991. Chloride concentrations in lower Tygee Creek have been typically less than 100 mg/L since TP2 was constructed. Before TP2 was constructed, chloride concentrations routinely exceeded 1,000 mg/L in both lower Tygee Creek and lower Roberts Creek because of saline soils in the Alkali Flat area (MFG 2002). Sodium concentrations at the TP2 toe drain ranged from 35.2 to 43.7 mg/L in 2019. Similarly, sodium concentrations have been typically less than 45 mg/L since TP2 was constructed. Before TP2 was constructed, sodium concentrations were as high as 1,895 mg/L in lower Tygee Creek (MFG 2002).

As discussed above, surface water quality data collected at TP2 toe drain have remained similar since 1998, suggesting that tailings deposition and water from the tailings impoundments are not affecting surface water quality downstream of TP2.

3.1.2 Groundwater

Groundwater levels were measured, and groundwater samples were collected at monitoring Well 12 (GW-12) in June, August, and November 2019. Well 12 was installed in July/August 2000 near the base of the TP2 dam (Figure 3-1) and is screened across shallow alluvium along lower Tygee Creek (JBR 2001, MFG 2002). Groundwater elevations calculated from depth to water measurements recorded at Well 12 from 2008 through 2019 are listed in Table 3-2. The groundwater elevation at Well 12 was 6372.1, 6371.1, and 6370.9 feet above mean sea level (AMSL) during the three 2019 monitoring events.

Groundwater levels at Well 12 have consistently fluctuated between 1 and 3 feet per year and do not exhibit an increasing or decreasing trend. This indicates that storage of tailings in TP2 are not affecting groundwater levels at Well 12.

Conditions at Smoky Canyon Mine in 2019 were slightly wetter than average with approximately 26 inches of cumulative precipitation for the calendar year. Refer to Table 3-3 for local monthly and annual precipitation data for the 10 years from 2010 through 2019.

Groundwater samples collected from Well 12 in 2019 were analyzed for total and dissolved cadmium, total and dissolved selenium, sodium, chloride, and specific conductance (Table 3-2). Total and dissolved cadmium were not detected (0.000063 mg/L MDL) in groundwater in 2019. Selenium concentrations ranged from not detected (0.0002 mg/L MDL) to 0.0003 mg/L (both total and dissolved) in 2019.

Sodium and chloride concentrations in groundwater at Well 12 have gradually increased since 2000 (Table 3-2). Groundwater monitoring conducted in 2002 in the immediate vicinity of Well 12 indicated that deeper Salt Lake Formation groundwater has relatively high sodium (1,870 to 5,980 mg/L) and chloride (2,900 to 8,530 mg/L) concentrations (MFG 2003a). The highest concentrations for Well 12 in 2019 were 459 mg/L sodium and 1,300 mg/L chloride. Well 12 is screened across unconsolidated surficial deposits that include weathered Quaternary salt deposits from the Alkali Flats area (Ralston 1987) and weathered Tertiary Salt Lake Formation material, both of which are likely sources of sodium and chloride to groundwater. Changes in sodium and chloride concentrations over time at Well 12 are likely due to changes in the proportions of (1) relatively saline groundwater in weathered Salt Lake Formation and (2) lower salinity/fresh recharge water originating from the Tygee Creek diversion channel and slope runoff within the Tygee Creek drainage, which enters the shallow groundwater flow system in the vicinity of Well 12.

As indicated above, no significant changes in cadmium or selenium concentrations in groundwater have been observed. For this reason, water from the tailings impoundments is not considered a likely source of sodium or chloride to shallow groundwater at Well 12.

3.2 Periodic Chemical Characterization of Tailings

Pursuant to the 2004 Recommendations Report (MFG 2004) and 2018 Operations and Abandonment Plan (Formation 2018b), periodic chemical characterization of tailings is to be conducted following any changes in mill operations or in the type of ore processed by the mill, or at least every three years, whichever is more frequent (Table 1-1). Examples of changes in mill operations include changes to the flotation process or to the gross physical characteristics of tailings (e.g., average grain size). The purpose of this monitoring activity is to identify any changes in the characteristics of new tailings disposed at the impoundments that may represent a change in risk for ecological receptors during ongoing operation of the impoundment.

No change in mill operations occurred during the period covered by this Annual Report. Characterization of the tailings was last conducted in 2017 (Formation 2018a). Tailings material will be sampled again in 2020, or sooner if there are significant changes in mill operations.

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TABLES

Table 1-1
Operations Action Matrix¹
Annual Report 2019 Habitat Management and Environmental Monitoring at the Smoky Canyon Mine Tailings Impoundments

Action	When	Location	Who	Reporting Requirement and/or Follow Up
Best Management Practices				
Habitat Elimination	Beginning in Spring 2006 ² , revisit 2 weeks after initial herbicide application, final application after 4 weeks, on-going effort	Margins of TP1 and TP2 ³	Simplot Mine Staff or Simplot's Contractor	Maintain field documentation including pre- and post-application photography
On-the-ground vegetation surveys	Following initial herbicide application, seasonally for three years, then annually in late spring	Margins of TP1 and TP2 and surrounding areas ³	Simplot Mine Staff or Simplot's Contractor	Additional herbicide application may result
Brood count monitoring and nesting location scoping, including general waterfowl/avian use of the ponds	Seasonally for three years ² , one day/week for three consecutive weeks during nesting season ⁴ , then once every five years for the life of the ponds	Margins of TP1 and TP2 and surrounding areas ³	IDFG Personnel or Wildlife Biologist	Maintain field records of sightings
Environmental Monitoring				
Monitor cadmium, selenium, dissolved sodium and total chloride concentrations and specific conductance at TP2 toe drain and at GW-12	Three quarters ⁵ of each year, coordinated with existing water quality monitoring activities	TP2 toe drain (dissolved cadmium, total selenium) and GW-12 (total cadmium, total selenium)	Simplot Mine Staff	Coordinated with existing routine water quality monitoring reporting requirements
Periodic chemical characterization of tailings	Within one month of changes in mill operations or in the type of ore processed, or every three years, whichever occurs first	The outlet of the tailings thickener at the mill or the tailings discharge outlet at TP2	Simplot Mine Staff	Technical Memorandum to agencies describing results of the sampling and recommending any revisions to the existing operation and closure plan
Area B Management Report	Annually beginning in 2006	--	Simplot Mine Staff or Simplot's Contractor	Annual report to Agencies (including IDEQ's Regional Mine Waste Representative) describing results.

¹ Draft matrix was included as Table 3-1 in 2005 Draft Revised Operations and Abandonment Plan (NewFields 2005); IDEQ conditionally approved the Operations portion of the plan. Matrix was revised and included as Table 1-1 in the 2014 Amendment to the Operations and Abandonment Plan (Formation 2014) based on Agency comments (April 3 and June 29, 2017). Table 1-1 remains unchanged.

² Schedule was shifted from 2005 to 2006.

³ The margin for habitat elimination efforts was established as 50 feet from pond water line in the 2005 Draft Revised Operations and Abandonment Plan. On-the-ground vegetation surveys and nesting location scoping activities are not limited to within 50 feet.

⁴ The USFWS recommends conducting surveys between the second week of April and the second week of May for geese, and between the second week of May to the second week of June for ducks. However, timing of nesting at the tailings ponds is heavily driven by annual weather conditions. Various monitoring techniques (i.e., routine BMP inspections, Simplot surveys, photo cameras) are being employed to determine the appropriate dates for nesting surveys.

⁵ The three quarters are April/May, July/August, and October/November. The original 404 Permit requirement for monitoring at the TP2 Toe Drain location is quarterly monitoring, however, due to large snow pack and low flow, winter sampling is not feasible.

Table 3-1
Environmental Monitoring Analytical Results for Surface Water at TP2 Toe Drain (TP-2TD)¹

Date	Cadmium, dissolved ² (mg/L)	Cadmium, total (mg/L)	Selenium Dissolved ² (mg/L)	Selenium Total (mg/L)	Sodium, dissolved (mg/L)	Chloride, total (mg/L)	Specific Conductance (µmhos/cm)
5/15/1998			0.002				
5/15/1999			0.001 U				
6/20/2000	0.0001 U	0.0003	0.002	0.003		38	641
9/1/2000							676
9/15/2000				0.001 U			
9/25/2000	0.0001 U	0.0001 U	0.001	0.001 U		43	690
12/1/2000							1000
12/19/2000	0.0001 U	0.0001 U	0.002	0.002		53	683
10/18/2002		0.0002 J	0.001 U	0.001 U	32.2	41	
12/11/2002	0.0001 U	0.0001 U	0.001 U	0.001 U	35.5	40 J	520
10/28/2003					32.6	49.2	443
5/17/2004					28.4	36.3	
7/27/2004					28.8	38.2	430
9/29/2004					30.3	40.6	475
5/18/2005					26.6	36.5	
7/12/2005					25.1	31	410
9/20/2005					26.9	40.7	
5/21/2006						38.5	435
8/6/2006	0.00002 U		0.001 J	0.001 J	23.9	38.3	428
10/17/2006					30.4	44.9	420
5/20/2007					29.7	54.11	
7/15/2007	0.00004 J			0.00096 J	30.2	64.8	
9/24/2007					33.5	76.8	
5/18/2008					31.2	72.1	470
7/20/2008					27.1	65.4	
11/9/2008	0.000037 J			0.0019 J	33.7		
6/1/2009	0.000024 U		0.0018 J	0.0025	27.5	50.3	782
9/27/2009	0.000026 B		0.00069 B	0.00087 B	28.1	61.3	750
11/21/2009	0.000062 B		0.0007 B	0.00082 B	28.7	71.1	708
6/7/2010	0.000036 U		0.00220	0.0024	31	70.8	772
9/29/2010	0.00012 B		0.00038	0.00099	33.8	91	799
11/10/2010	0.000057 U		0.0009 B	0.00087 B	34.4	95.5	840
6/15/2011	0.000026 UJ		0.00420	0.0044	30.6	68.1	759
9/29/2011	0.000038 B		0.00062 B	0.00065 B	32.8	77.1	690
11/9/2011	0.000039 B		0.0009 B	0.0012 B	31.5	78	742
5/12/2012	0.000029		0.002	0.002	30.8	63.9	648
9/13/2012	0.000046		0.00058	0.00066	35.2	78	758
11/13/2012	0.000055		0.00044	0.00050	36.8	87.3	820

Table 3-1
Environmental Monitoring Analytical Results for Surface Water at TP2 Toe Drain (TP-2TD)¹

Date	Cadmium, dissolved ² (mg/L)	Cadmium, total (mg/L)	Selenium Dissolved ² (mg/L)	Selenium Total (mg/L)	Sodium, dissolved (mg/L)	Chloride, total (mg/L)	Specific Conductance (µmhos/cm)
5/20/2013	0.000037 U		0.00110 J	0.00051 J	32.4	68.3	739.3
8/23/2013	0.00006		0.00027	0.00033	35	82.4	542.9
11/15/2013	0.000037 U		0.00063	0.00072	37.1	85.6	778.6
2/18/2014	0.000039 U		0.00055	0.00063	38.4	94.5	814.2
5/20/2014	0.000039 U		0.0017	0.0023	33.5	61.6	742
8/11/2014	0.000039 U		0.00073 J	0.0006 J	31.9	69.7	759.8
11/18/2014	0.000057		0.00073 J	0.00068 J	33.2	78.9	764
3/24/2015	0.000072 U		0.00022 U	0.0012	35.7	83.6	811.6
5/6/2015	0.000072 U		0.0024	0.0023	33.1	70.1 J-	666
9/11/2015	0.000083		0.00062 U	0.00071	37.1	80.9	883
11/3/2015	0.000072 U		0.00062 U	0.00062 U	36.5	87.9	747
2/9/2016	0.000072 U		0.00062 U	0.00068	42	109	831
5/16/2016	0.000021 U		0.0046	0.0044	33.7	76.3	732.7
7/6/2016	0.00003		0.0013	0.0013	36	66.8	747
11/7/2016	0.000021 U		0.0002	0.0003	30.5	46.5	1231
2/22/2017	0.000035		0.0011	0.0016	41.9	93.5	936
5/15/2017	0.000038 U		0.0023	0.0022	35.9	67	739
8/3/2017	0.000038 U		0.0007	0.0004	37.2	81.5	769
11/13/2017	0.000038 U		0.0007	0.0007	37.6	76.8	719
2/14/2018	0.000038 U		0.0010	0.0009	38.5	91.9	856.5
5/14/2018	0.000063 U		0.0016	0.0020	35	67	713.5
8/7/2018	0.000063 U		0.0006	0.0006	38.4	80.2	757
10/22/2018	0.000063 U		0.0005	0.0005	40.9	99.5	820
3/29/2019	0.000063 UJ		0.0017	0.0015	43.7	109	937.6
5/20/2019	0.000063 U		0.0037	0.0035	35.2	76.5	775
8/13/2019	0.000063 U		0.0010	0.0010	38	83.6	816
11/7/2019	0.000063 U		0.0011	0.0010	43.5	97.2	705

Notes:

- 1 TP-2TD is at the base of the TP2 dam that represents seepage water from the high-permeability alluvial materials used below the dam. There is no direct discharge from the impoundments to surface drainages.

Blank cell Indicates that the analyte was not measured.

Standards ²

Chronic water quality criteria for protection of aquatic life under the Idaho Administrative Procedures Act (IDAPA 58.01.02)

Cadmium Criterion = 0.0006 mg/L (corresponding to a hardness of 100 mg/L)

Selenium Criterion = 0.0031 mg/L

Qualifiers

- B Below the Practical Quantification Limit
- U Method Detection Limit for the results less than detector
- J Estimated
- UJ Estimated, not detected
- J- Estimated, low bias

Table 3-2
Environmental Monitoring Analytical Results for Groundwater at Well 12

Date	Cadmium, dissolved (mg/L)	Cadmium, total ¹ (mg/L)	Selenium, dissolved (mg/L)	Selenium, total ¹ (mg/L)	Sodium, dissolved (mg/L)	Chloride, total (mg/L)	Specific Conductance (µmhos/cm)	Water Level Elevation (Feet AMSL)
9/1/2000							420	
9/6/2000	0.0001 U		0.001 U		17	19	493	6370
12/1/2000							500	
12/21/2000	0.0001 U		0.003	0.003	18	34	491	
12/11/2002	0.002 U	0.001	0.001 B	0.004 B		29 J	511	
8/1/2006	0.00002 U		0.00085 B					
6/11/2007	0.00002 B			0.0027				
11/5/2007	0.00002 U			0.0002 U	52.2	217		
6/3/2008	0.000043 B			0.0024	40.3		611	6371.97
9/30/2008	0.000048 B			0.0029	30	89.6	591	6369.48
6/1/2009		0.000053 B		0.0008 B			1637	6372.41
11/21/2009		0.00024 B		0.0002 U			1628	6371.03
6/7/2010		0.000042 B		0.0002 U	111	515	1913	6372.15
9/29/2010		0.00015 B		0.00031 B			1782	6370.9
11/10/2010		0.00041		0.0002 U	96.4	436	1769	6370.9
6/15/2011		0.00008		0.00092	109	535	2044	6372.78
9/29/2011		0.000053 B		0.0002 U	133	550	2060	6371.08
11/9/2011		0.000032 U		0.0002 U	119	552	2400	6371.03
5/12/2012		0.000028	0.0002 U	0.0002 U	137	554	1988	6370.8
9/13/2012		0.00002 U	0.0002 U	0.0002 U	140	588	2155	6370.8
11/13/2012		0.00004 U	0.0002 U	0.0002 U	139	639	2316	6370.8
5/20/2013		0.000088 U	0.0002 U	0.0002 U	151	635	2442	6371.8
9/24/2013		0.000037 U	0.0002 U	0.0002 U	150	584	2280.1	6370.7
11/15/2013		0.000037 U	0.00023	0.00033	123	520	2141.8	6370.9
2/18/2014		0.000039 U	0.0002 U	0.0002 U	179	685	2607	6370.3
5/20/2014		0.00027	0.00026	0.00028	177	698	2662	6372.16
8/28/2014		0.000039 U	0.0002 U	0.0002 U	190	749	2956	6371.8
11/18/2014		0.00012	0.00031	0.0002 U	156	545	2356	6371.2
5/7/2015		0.000072 U	0.00069 U	0.00062 U	208	79.2 J-	2746.9	6372.3
7/29/2015		0.000072 U	0.00002 U	0.00002 U	161	620	2397	
9/15/2015		0.000072 UJ	0.00058 J-	0.00062 UJ	162 J-	574 J-	2298.6	6371.1
11/3/2015		0.000072 U	0.00062 U	0.00062 U	186	709	2744	6371.0
5/10/2016		0.000021 U	0.0029	0.0024	151	443	2187.6	6372.3
7/12/2016		0.0001 U	0.0012 U	0.0012 U	159 J	579	2173.9	6371.9
11/8/2016		0.000021 U	0.00076	0.00091	139	531	2557.7	6371.2
6/5/2017		0.000038 U	0.0012 J	0.0014	188	633	2776	6373.0
8/23/2017		0.000038 U	0.0004 U	0.0004 U	302	1080	3733.2	6371.4
11/2/2017		0.000038 U	0.0004 U	0.0004 U	307	1050	3946	6370.9
5/17/2018	0.000063 U	0.000063 U	0.0006	0.0007	266	844	3129.8	6372.1
7/9/2018	0.000063 U	0.000063 U	0.0003	0.0003	296	902	3184.2	6371.3
10/29/2018	0.000063 U	0.000063 U	0.0002 U	0.0002 U	313	1000 J	3671.1	6370.6
6/17/2019	0.000063 U	0.000063 U	0.0003	0.0003	415	1290	4249	6372.1
8/14/2019	0.000063 U	0.000063 U	0.0002 U	0.0002 U	412	1240	4281	6371.1
11/6/2019	0.000063 U	0.000063 U	0.0002 U	0.0002 U	459	1300	4331.6	6370.9

Notes:

Blank cell indicates that the analyte was not measured.

Standards ¹

Primary groundwater quality standards under the Idaho Administrative Procedures Act (IDAPA 58.01.11).

Cadmium Standard = 0.005 mg/L

Selenium Standard = 0.05 mg/L

Qualifiers

B Below the Practical Quantification Limit
U Method Detection Limit for the results less than detection
J Estimated
UJ Estimated, not detected
J- Estimated, low bias

Table 3-3
Smoky Canyon Mine Precipitation Records, 2010-2019

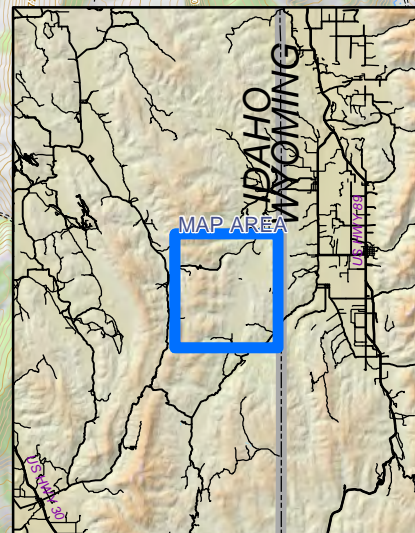
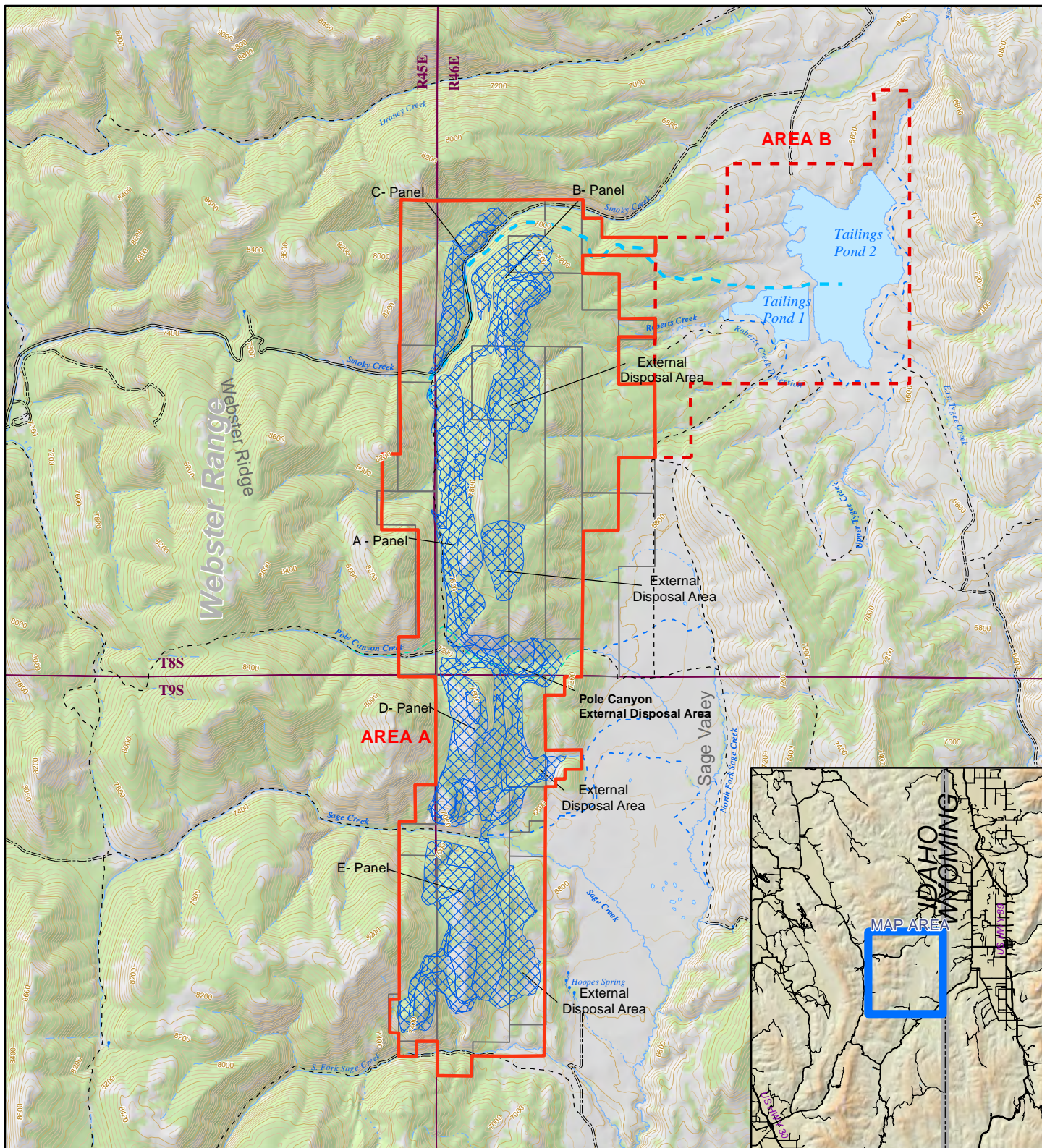
Month	10-yr Average	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	2.38	1.99	2.61	2.24	1.63	2.11	1.01	3.33	4.89	2.09	1.91
February	2.50	0.97	1.73	2.25	0.99	4.41	0.96	1.54	5.5	2.28	4.33
March	1.92	0.86	3.32	1.1	1.84	2.34	0.79	2.56	2.46	2.8	1.13
April	2.59	3.36	4.24	2.22	2.47	1.57	1.74	2.0	3.09	2.58	2.66
May	2.67	1.91	3.14	1.77	2.61	0.93	5.4	3.64	1.89	2.21	3.23
June	1.35	2.89	2.09	0.11	0.09	1.6	1.38	1.01	1.12	1.39	1.82
July	0.90	0.26	1.92	0.96	2.0	0.63	1.63	0.27	0.15	0.24	0.9
August	1.51	1.78	1.86	0.04	1.12	5.06	1.45	0.64	1.36	1.27	0.54
September	2.40	0.5	0.36	0.42	2.92	4.34	2.68	4.82	3.13	0.18	4.62
October	2.10	2.79	2.66	1.67	1.84	0.91	0.53	5.79	0.75	2.43	1.65
November	1.94	2.79	1.85	1.92	1.34	2.86	2.25	1.12	2.97	1.67	0.59
December	1.99	2.73	0.97	2.74	1.83	1.61	1.39	3.31	1.34	1.63	2.37
Total	24.25	22.83	26.75	17.44	20.68	28.37	21.21	30.03	28.65	20.77	25.75
Percent Difference from Average:		94%	110%	72%	85%	117%	87%	124%	118%	86%	106%

Notes:

Daily precipitation is measured and recorded at a precipitation gauge at the Smoky Canyon Mine Office and Security Building. Monthly, annual, and 10-year precipitation totals and averages are computed from these data.

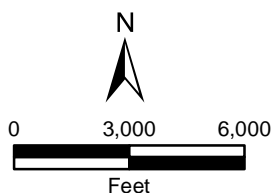
All numbers reflect inches of water.

FIGURES



Legend

- Mineral Lease Area
- - - Simplot Property Boundary- Area B
- Mine Disturbance Area
- - - Tailings Line
- Lease and Special Use Boundary



J.R. SIMPLOT COMPANY
 SMOKY CANYON MINE
 TAILINGS IMPOUNDMENTS - ANNUAL REPORT
 FIGURE1-2

SMOKY CANYON MINE AREA A AND AREA B

DATE: JUNE 2020

BY: WSB

FOR: LJM

FORMATION
 ENVIRONMENTAL



Legend

- Nest Locations 2019
- - - Simplot Property Boundary - Area B
- Roberts Creek Diversion

Notes:
 Depiction of spraying areas are approximate.
 Water levels fluctuate annually.

Aerial Imagery Date - 2019

J.R. SIMPLOT COMPANY
 SMOKY CANYON MINE
 TAILINGS IMPOUNDMENTS - ANNUAL REPORT
 FIGURE 2-1

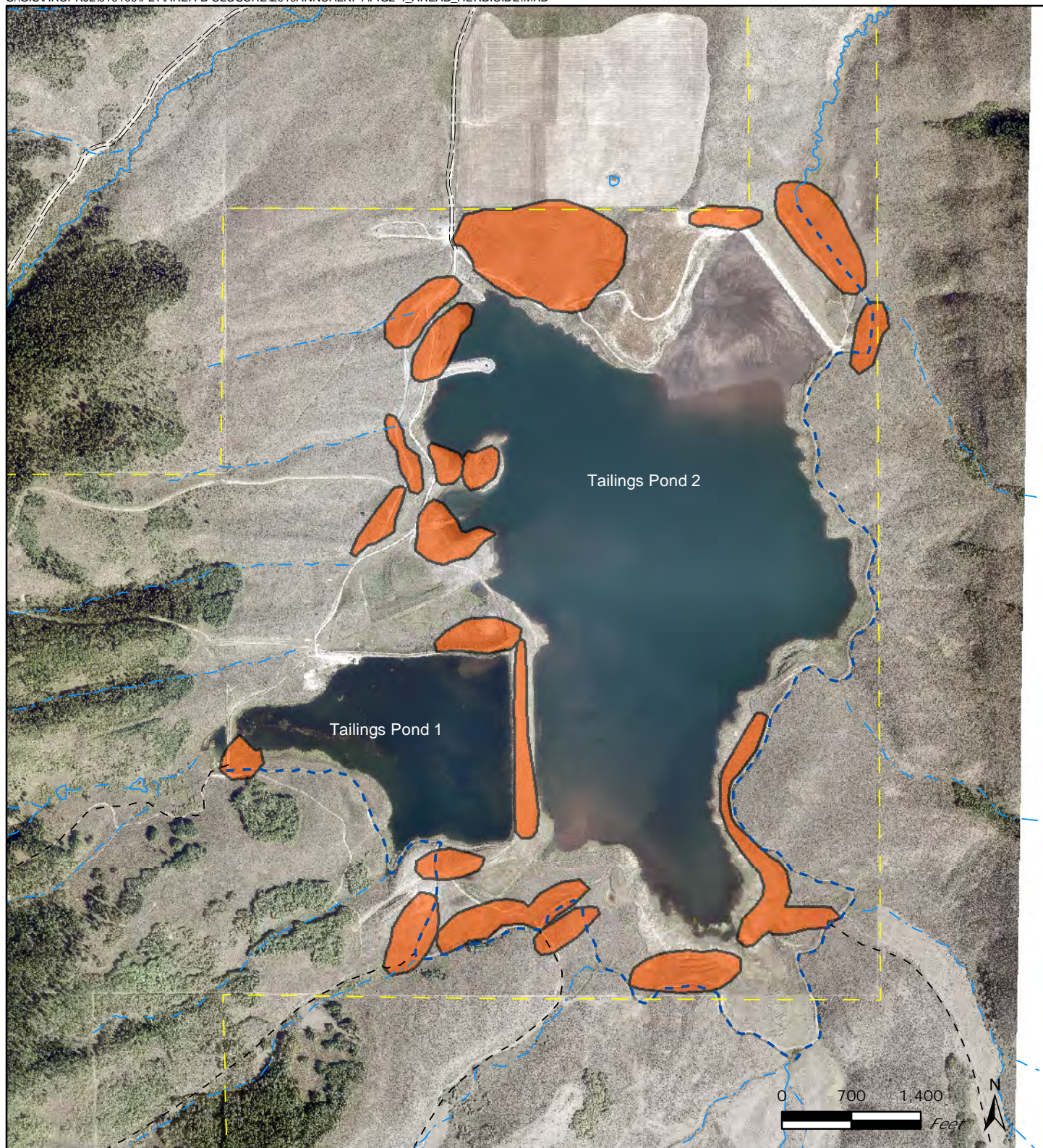
2019 NEST LOCATIONS

DATE: JUNE 2020

BY: WSB

FOR: LJM

FORMATION
 ENVIRONMENTAL



Legend

- Areas Sprayed with Herbicide 2019
- Simplot Property Boundary - Area B
- Hydrology
 - Perennial
 - Intermittent
 - Robert's Creek Diversion Ditch

Notes:
Camera directions are approximate,
and cameras may shift direction over time.

Aerial Imagery Date - 2019

J.R. SIMPLOT COMPANY
SMOKY CANYON MINE
TAILINGS IMPOUNDMENTS - ANNUAL REPORT
FIGURE 2-2

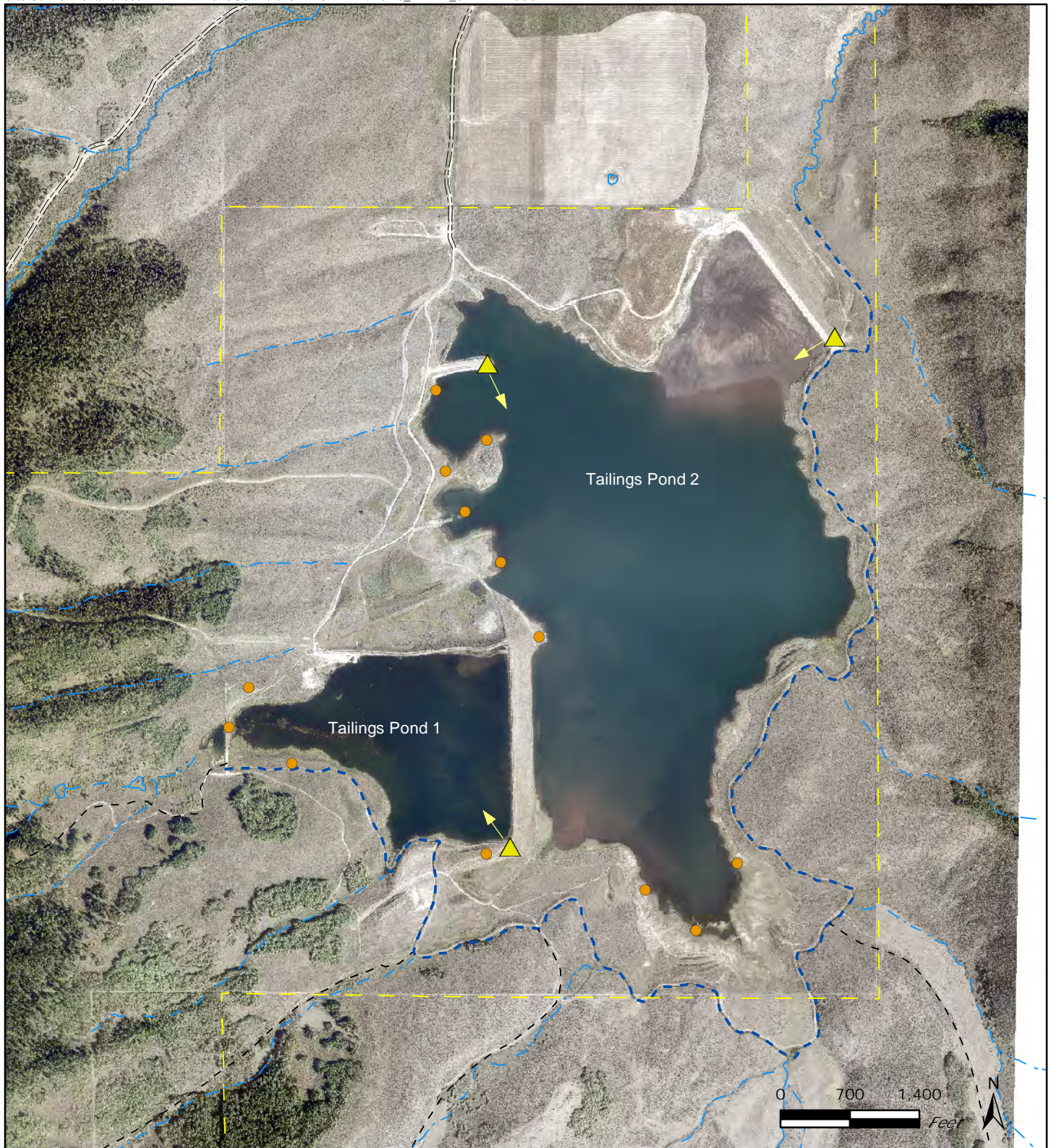
2019 ACTIONS TO REDUCE SHORELINE HABITAT

DATE: JUNE 2020

BY: WSB

FOR: LJM

FORMATION
ENVIRONMENTAL



Legend

- Predator Decoy Locations
- ▲ Camera Locations
- Simplot Property Boundary - Area B
- Hydrology
- Perennial
- - - Intermittent
- - - Robert's Creek Diversion Ditch

Notes:
Camera directions are approximate,
and cameras may shift direction over time.

Aerial Imagery Date - 2019

J.R. SIMPLOT COMPANY
SMOKY CANYON MINE
TAILINGS IMPOUNDMENTS - ANNUAL REPORT
FIGURE 2-3

2019 TAILINGS IMPOUNDMENTS CAMERA AND PREDATOR DECOY LOCATIONS

DATE: JUNE 2020

BY: WSB

FOR: LJM

FORMATION
ENVIRONMENTAL



Legend

Monitoring Locations Under Operations and Abandonment Plan

- ▲ Surface Water
- ⊗ Groundwater

Other Monitoring Locations

- Surface Water

— Simplot Property Boundary - Area B

Hydrology

- Perennial
- - - Intermittent
- - - Robert's Creek Diversion Ditch

Note:
Aerial Imagery Date - 2019

J.R. SIMPLOT COMPANY
SMOKY CANYON MINE
TAILINGS IMPOUNDMENTS - ANNUAL REPORT
FIGURE 3-1

SURFACE WATER AND GROUNDWATER MONITORING LOCATIONS

DATE: AUG 24, 2020

BY: WSB

FOR: LJM

FORMATION
ENVIRONMENTAL

APPENDIX A

Selected 2019 Photographs

**Section 1:
Observations of Vegetation Conditions**



Limited shoreline vegetation from TP2 dam, looking south (August 13, 2019).

**Section 2:
Automatic Camera**

Camera at TP2– Looking West



Photo WSCT2004: Limited shoreline vegetation (July 6, 2019)



Photo WSCT2412: Limited Shoreline Vegetation (August 9, 2019)

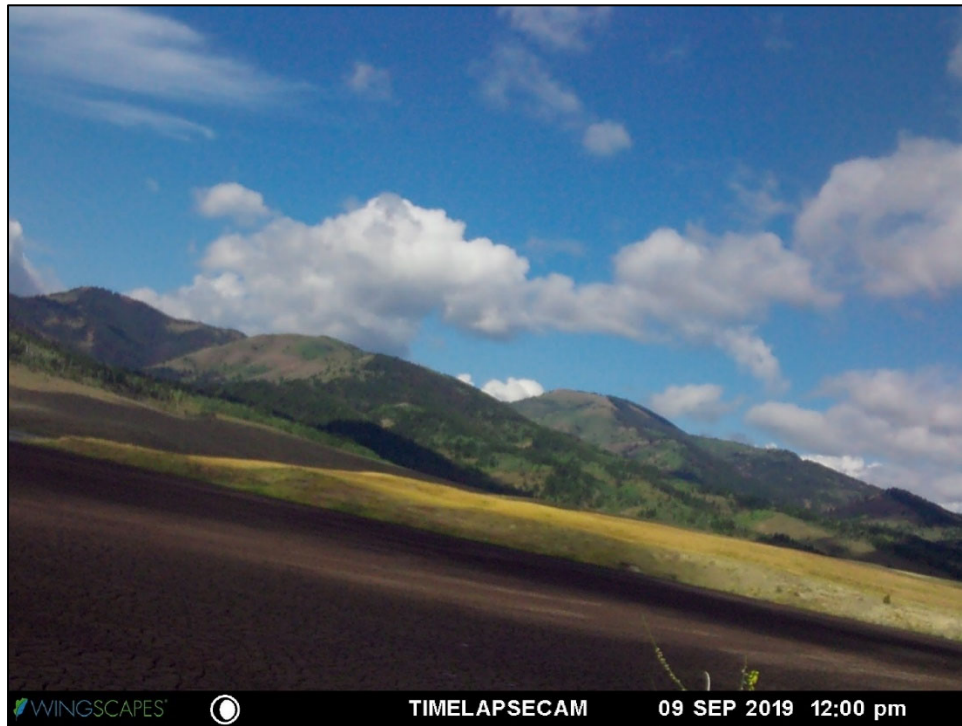


Photo WSCT2786: Limited shoreline vegetation (September 9, 2019)



Photo WSCT3136: Limited shoreline vegetation (October 8, 2019).

Camera at TP1– South End, Looking Northwest

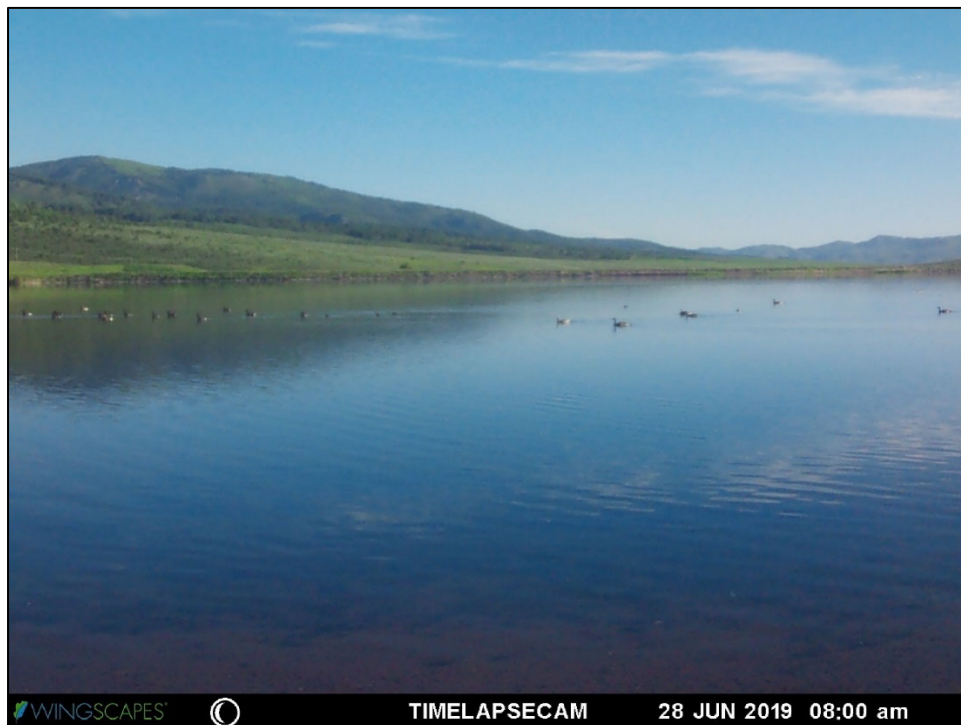


Photo WSCT0750: Waterfowl (June 28, 2019)



Photo WSCT0891: Limited Shoreline Vegetation (August 14, 2019)

Camera at TP2 – Looking South



Photo WSCT5421: Waterfowl (Spring 2019)



Photo WSCT7097: Limited Shoreline Vegetation (Fall 2019)

APPENDIX B

Nest/Brood Count Surveys – Stantec Letter Report



Stantec Consulting Services Inc.
3995 South 700 East Suite 300
Salt Lake City UT 84107-2540

June 17, 2019
File: 203711357

Attention: Mr. Evan Hathaway, Environmental Specialist
J.R. Simplot Company, Smoky Canyon Mine
1890 Smoky Canyon Road
Afton, Wyoming 83110

Dear Evan,

Reference: Nest/Brood Count Surveys – Smoky Canyon Mine Tailings Ponds 1 and 2

Introduction

As described in *Smoky Canyon Mine's Habitat Management and Monitoring Plan* (Plan), bird ground surveys, including general waterfowl use of the tailings ponds, are required to be conducted once every 5 years. J.R. Simplot Company (Simplot) forwards results from these surveys to the Idaho Department of Environmental Quality and U.S. Fish and Wildlife Service to consult with these agencies to determine whether additional habitat management efforts are needed to further reduce resident waterfowl numbers at the tailings impoundments. The most recent bird surveys of the tailings ponds were completed by Simplot in May and June of 2014. Therefore, at the request of Simplot, Stantec Consulting Services Inc. (Stantec) completed nest/brood count surveys around Tailings Ponds 1 and 2 on June 4 and 5, 2019 in accordance with requirements in the Plan.

Methods

Two Stantec wildlife biologists completed nest/brood surveys within a 200-foot-wide buffer of Tailings Ponds 1 and 2 (survey area) (**Attachment A**) on June 4 and 5, 2019. It is important to note that the water level of the tailings ponds was several feet higher than what is displayed on Figures 1 and 2 in **Attachment A** and the actual survey area extended up onto the uplands more than what is shown on Figures 1 and 2. The water level was also higher during these surveys than during the last surveys conducted at the tailings ponds in 2014. The surveys consisted of pedestrian surveys with 100 percent visual coverage of the survey area using binoculars, focusing on areas that could support waterfowl and other bird species that may use the tailings ponds for nesting. Photos of the representative habitats present in the survey area are shown in **Attachment B**.

Results

Similar to the 2014 bird surveys of the tailings ponds, vegetation present includes a mix of reseeded grasses, forbs, riparian vegetation, and sagebrush on flat to slightly rolling hills surrounding the tailings ponds. Due to the high-water level in the tailings ponds, mud flats were not present during the surveys. The tailings ponds' impoundments/dams were composed primarily of large rock with sparse grasses, forbs, and weeds. However, the northeast dam of Tailings Pond 2 contained nearly zero vegetation within the large rocks, which was in contrast to 2014 survey photos showing grasses and forbs mixed in with the large rocks as shown in Photo 1B of **Attachment B**.

Reference: Nest/Brood Counts – Smoky Canyon Mine Tailings Ponds 1 and 2

Overall, fewer nest sites were found during these surveys than during the 2014 bird surveys of the tailings ponds (14 nests in 2014 vs. 4 nests in 2019). This was especially true along the northeast dam and south shoreline of Tailings Pond 2 as no nest sites were documented along the dam or shoreline, respectively. Surveys documented several active nests (one American wigeon and one mallard) as well as two inactive Canada goose nests in the survey area (**Table 1; Attachment A; Attachment C**).

Table 1 Nests Observed during the June 4-5, 2019 Surveys

Nest ID ¹	Common Name	Scientific Name	Status	Number of Eggs	Location	Comments
AMWI 1	American wigeon	<i>Mareca americana</i>	Active	9	Tailings Pond 1	Hen flushed from nest, which was located under a sagebrush approximately 50 feet from the water's edge. She returned to the nest 20 minutes later.
MALL 1	Mallard	<i>Anas platyrhynchos</i>	Active	1	Tailings Pond 1	Hen flushed from nest, which was located in bunchgrasses approximately 14 feet from the water's edge on the north dam.
CAGO 1	Canada goose	<i>Branta canadensis</i>	Inactive	N/A	Tailings Pond 2	Nest was located on an island in the northwest corner of the pond. Contained eggshell fragments, indicating that it was likely active earlier this spring.
CAGO 2	Canada goose	<i>Branta canadensis</i>	Inactive	N/A	Tailings Pond 2	Nest was located on an island in the northwest corner of the pond. Did not contain eggshell fragments but did contain some feathers. Uncertain if it was from 2019 or 2018.

¹Nest ID corresponds to labels on Attachment A, Figure 2.

One of the Canada goose nests (CAGO 1) appeared to have been used this year (2019) as eggshell fragments were located in and near the nest. It was uncertain if the other Canada goose nest was used this year or if it was from 2018. There were old feathers present but there were no eggshell fragments and the nest was in relatively poor condition. No other bird nests were documented during the surveys.

In addition to nests, a total of five broods (four Canada geese and one mallard) were documented during the surveys (**Table 2**). The mallard brood was flushed from the eastern shoreline of Tailings Pond 2 and no adult was present. A hen mallard was later flushed along the same eastern shoreline of Tailings Pond 2 and appeared to be searching for her brood as she was quacking and flying low along the water. The Canada goose broods observed appeared to be relatively young (less than 2 weeks of age) and were swimming with adults in the tailings ponds.

Table 2 Broods Observed during the June 4-5, 2019 Surveys

Common Name	Scientific Name	Number	Approximate Age	Location
Mallard	<i>Anas platyrhynchos</i>	7	< 1 week	Tailings Pond 2

Reference: Nest/Brood Counts – Smoky Canyon Mine Tailings Ponds 1 and 2

Canada goose	<i>Branta canadensis</i>	8	< 2 weeks	Tailings Pond 2
Canada goose	<i>Branta canadensis</i>	3	< 2 weeks	Tailings Pond 1
Canada goose	<i>Branta canadensis</i>	5	< 2 weeks	Tailings Pond 1
Canada goose	<i>Branta canadensis</i>	4	< 1 week	Tailings Pond 1 ¹

¹Brood was observed immediately adjacent to Tailings Pond 1 on the Roberts Creek Diversion Pond.

A variety of other species of birds were documented within or immediately adjacent the survey area, but nests or broods of these species were not found during the surveys and could have been inadvertently missed during the surveys. **Table 3** presents bird species that were observed within or immediately adjacent to the survey area around Tailings Ponds 1 and 2.

Table 3 Bird Species Observed during the June 4-5, 2019 Surveys

Common Name	Scientific Name	Location
Blue-winged teal	<i>Spatula discors</i>	Tailings Pond 1
Cinnamon teal	<i>Spatula cyanoptera</i>	Tailings Ponds 1 and 2
Green-winged teal	<i>Anas crecca</i>	Tailings Pond 2
American wigeon	<i>Mareca americana</i>	Tailings Pond 1 ¹ and 2
Mallard	<i>Anas platyrhynchos</i>	Tailings Ponds 1 ¹ and 2 ²
Northern shoveler	<i>Spatula clypeata</i>	Tailings Ponds 1 and 2
Gadwall	<i>Mareca strepera</i>	Tailings Ponds 1 and 2
Lesser scaup	<i>Aythya affinis</i>	Tailings Ponds 1 and 2
Canada goose	<i>Branta canadensis</i>	Tailings Ponds 1 ² and 2 ^{1,2}
American coot	<i>Fulica americana</i>	Tailings Pond 2
Western grebe	<i>Aechmophorus occidentalis</i>	Tailings Pond 2
Eared grebe	<i>Podiceps nigricollis</i>	Tailings Pond 2
American white pelican	<i>Pelecanus erythrorhynchos</i>	Tailings Ponds 1 and 2
Wilson's phalarope	<i>Phalaropus tricolor</i>	Tailings Pond 2
Spotted sandpiper	<i>Actitis macularius</i>	Tailings Ponds 1 and 2
Killdeer	<i>Charadrius vociferus</i>	Tailings Ponds 1 and 2
American avocet	<i>Recurvirostra americana</i>	Tailings Pond 2
Common raven	<i>Corvus corax</i>	Tailings Ponds 1 and 2
Turkey vulture	<i>Cathartes aura</i>	Tailings Pond 2
Red-tailed hawk	<i>Buteo jamaicensis</i>	Tailings Ponds 1 and 2
Peregrine falcon	<i>Falco peregrinus</i>	Tailings Pond 2
Cooper's hawk	<i>Accipiter cooperii</i>	Tailings Pond 2
Osprey	<i>Pandion haliaetus</i>	Tailings Pond 2
Broad-tailed hummingbird	<i>Selasphorus platycercus</i>	Tailings Ponds 1 and 2
Western meadowlark	<i>Sturnella neglecta</i>	Tailings Ponds 1 and 2
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Tailings Ponds 1 and 2
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Tailings Ponds 1 and 2
Violet-green swallow	<i>Tachycineta thalassina</i>	Tailings Ponds 1 and 2
Barn swallow	<i>Hirundo rustica</i>	Tailings Ponds 1 and 2
Brewer's sparrow	<i>Spizella breweri</i>	Tailings Ponds 1 and 2
American robin	<i>Turdus migratorius</i>	Tailings Ponds 1 and 2
Northern flicker	<i>Colaptes auratus</i>	Tailings Pond 1
Western tanager	<i>Piranga ludoviciana</i>	Tailings Pond 1

Reference: Nest/Brood Counts – Smoky Canyon Mine Tailings Ponds 1 and 2

Common Name	Scientific Name	Location
Hammond's flycatcher	<i>Empidonax hammondii</i>	Tailings Pond 1
Western wood-peewee	<i>Contopus sordidulus</i>	Tailings Pond 1
Yellow warbler	<i>Setophaga petechia</i>	Tailings Pond 1
Yellow-rumped warbler	<i>Setophaga coronata</i>	Tailings Ponds 1 and 2

¹Indicates species nest was documented during surveys.

²Indicates species broods were documented during surveys.

Similar to the 2014 bird surveys of the tailings ponds, Canada geese were by far the most abundant species observed during the surveys. In addition to the four broods observed, several flocks of non-breeding individuals were observed on Tailings Ponds 1 and 2, numbering around 75. These flocks appear to heavily utilize portions of the northwest shoreline of Tailings Pond 2, despite deterrents (fox and coyote decoys) placed along the shoreline.

Conclusion

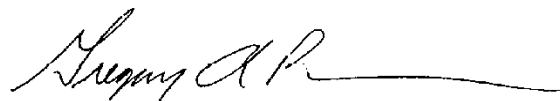
The surveys indicated that a variety of bird species, including several nesting waterfowl species, utilize Tailings Ponds 1 and 2. This is very similar to the results of the bird surveys of the tailings ponds conducted in 2014. However, 10 fewer nests were located during these surveys than what was found during the 2014 bird surveys of the tailings ponds. Numerous pairs of waterfowl (primarily ducks) as well as shorebirds (Wilson's phalarope, spotted sandpiper, American avocet) were observed utilizing Tailings Ponds 1 and 2 and may nest in the vicinity in the coming weeks, especially given the late spring weather conditions so far in 2019 that may have delayed earlier nesting and breeding attempts.

As stated in previous bird survey reports of the tailings ponds, nesting vegetation will continue to be evaluated by Simplot for future management considerations and options for nest management, particularly on the dams of the tailings ponds.

If you have any questions regarding the nest/brood count surveys, please contact me at 801-438-2256 or greg.a.brown@stantec.com or Stantec's lead wildlife biologist, Matt Brekke, at 970-449-8614 or matt.brekke@stantec.com.

Regards,

Stantec Consulting Services Inc.



Gregory A. Brown

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Mobile: 801-550-6709
greg.a.brown@stantec.com



Matt Brekke CWB

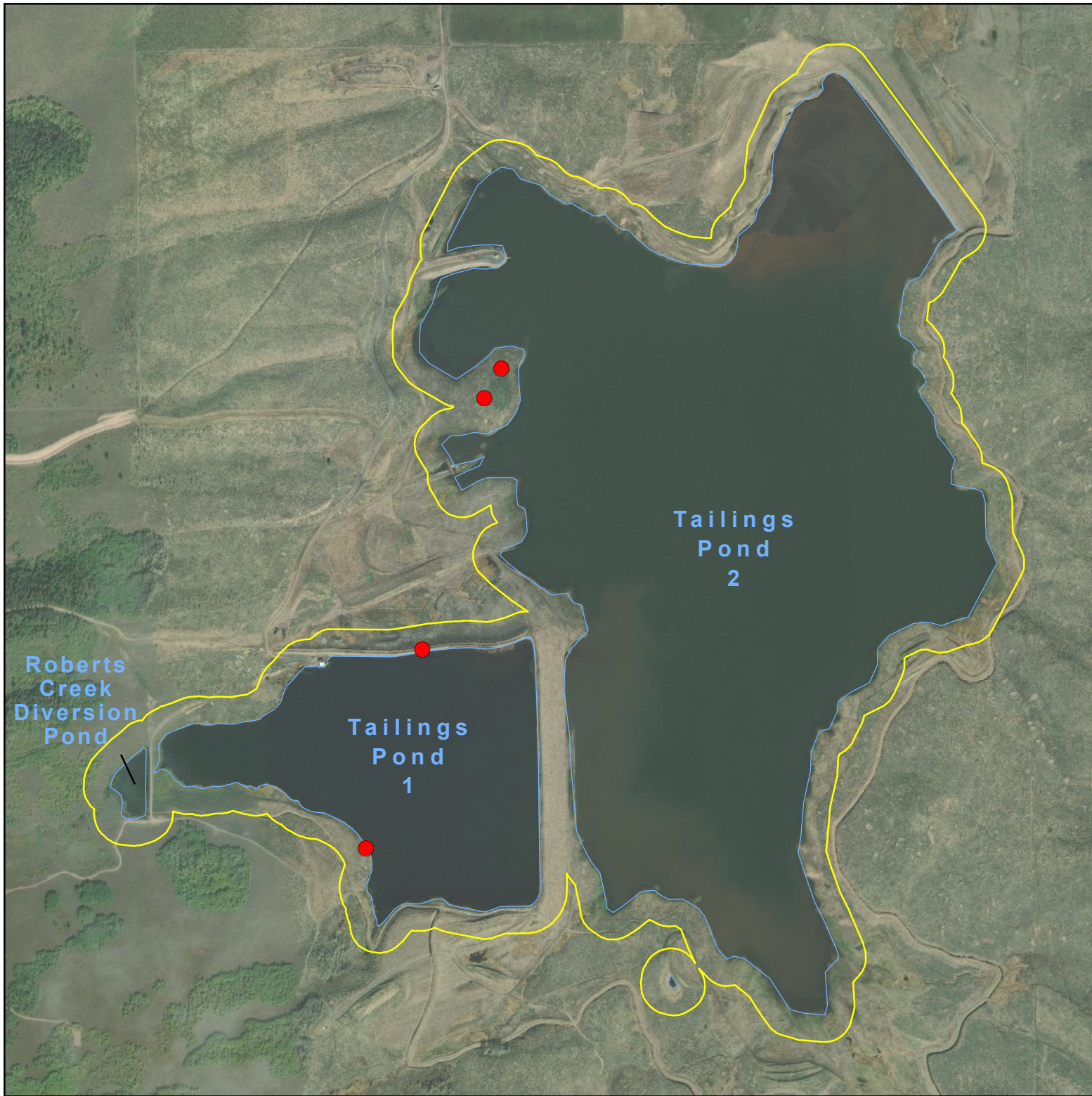
Senior Wildlife Biologist
Direct: 970-449-8614
Mobile: 970-658-6606
matt.brekke@stantec.com

Attachments

Attachment A – Figure 1 Project Overview
Figure 2 Nest Locations
Attachment B – Representative Habitat and Nest Photos
Attachment C – Nest Survey Forms

Attachment A

Figure 1 Project Overview



- Tailings Pond
- Survey Area
- Nest Location



Project Location

Caribou County, ID

Client/Project

J.R. Simplot Co./Smoky Canyon Mine
Tailings Ponds 1 & 2 Bird Surveys

Figure No.

1

Title

Project Overview

203711357

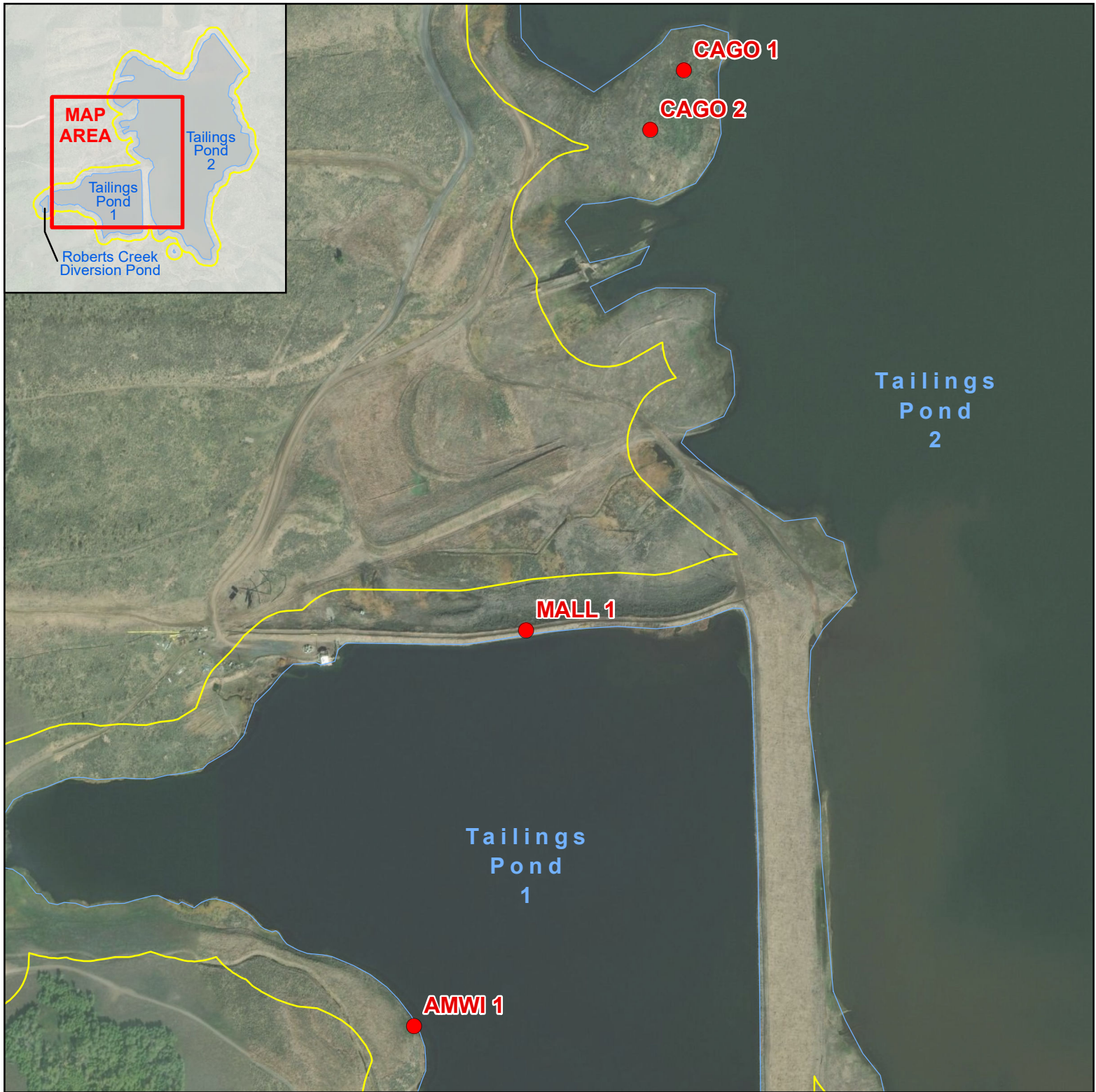
Prepared by JSB on 2019-6-10

Technical Review by MB on 2019-6-11

Independent Review by GB on 2019-6-12

Attachment A

Figure 2 Nest Locations



- Nest Location
- Tailings Pond
- Survey Area



Project Location

203711357

Caribou County, ID

Prepared by JSB on 2019-6-10

Technical Review by MB on 2019-6-11

Independent Review by GB on 2019-6-12

Client/Project

J.R. Simplot Co./Smoky Canyon Mine
Tailings Ponds 1 & 2 Bird Surveys

Figure No.

2

Title

Nest Locations



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Attachment B

Representative Habitat and Nest Photos



Photo 1A. East Side of Tailings Pond 2



Photo 1B. Impoundment Area for Tailings Pond 2

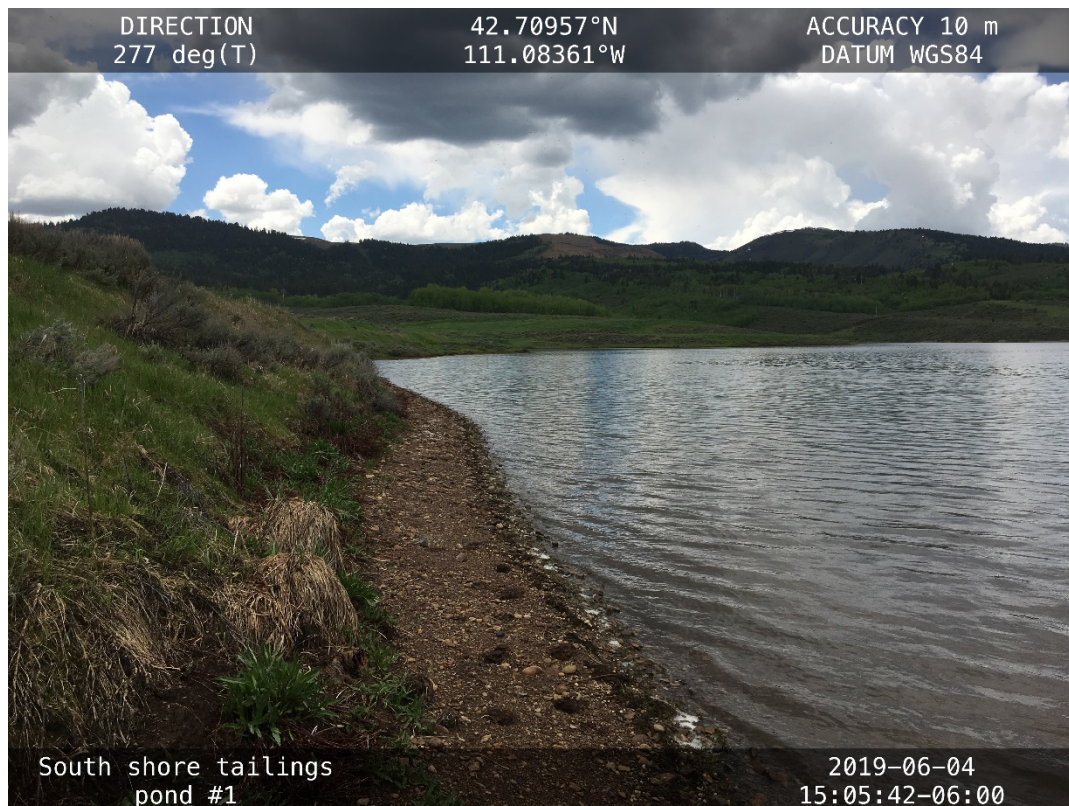


Photo 2. South Side of Tailings Pond 1



Photo 3. Active American Wigeon Nest

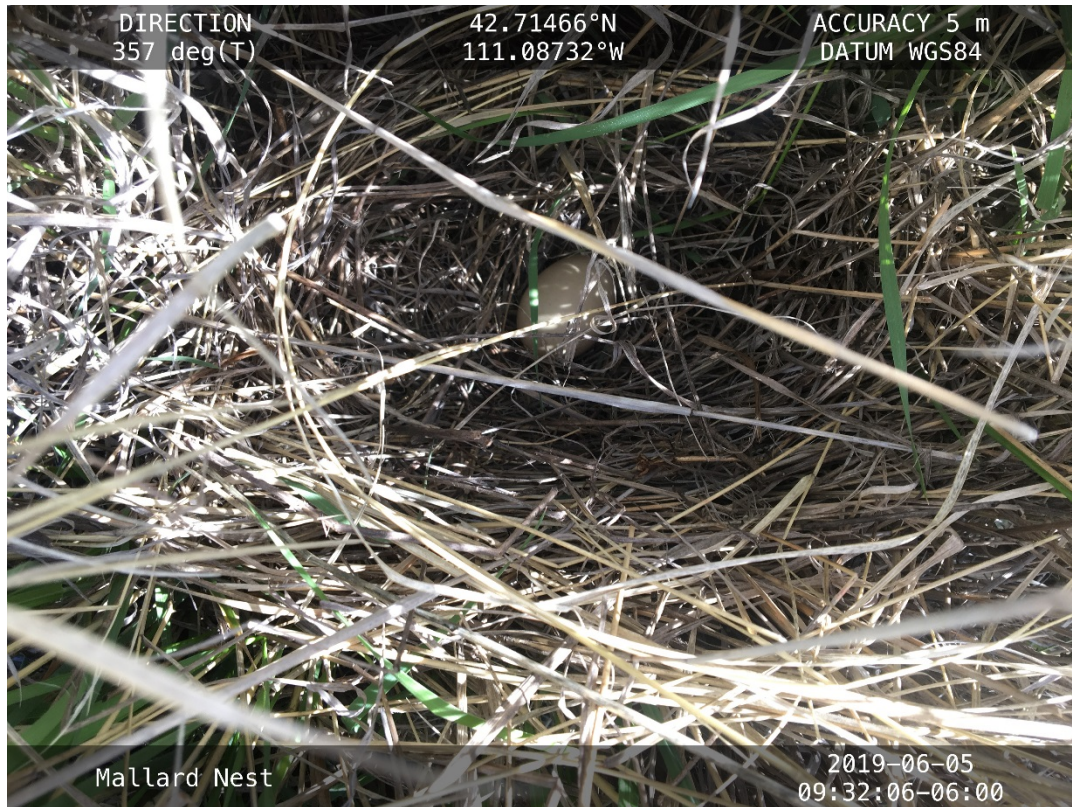


Photo 4. Active Mallard Nest



Photo 5. Inactive Canada Goose Nest (Likely Used in 2019)



Photo 6. Inactive Canada Goose Nest (uncertain if used in 2018 or 2019)

Attachment C
Nest Survey Forms

MIGRATORY BIRD NEST SURVEY FORM

PROJECT NUMBER:

203711357

DATE: 6-4-19	CLIENT/PROJECT NAME: J.R. Simplot, Smoky Canyon Mine – Tailings Ponds Bird Survey
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INVESTIGATORS: M. Brekke D. Kikbert	UTM COORDINATES (ZONE 12)	
	EASTING 492800	NORTHING 4728702
LOGBOOK PAGE No's: Page 2	PHOTO ID(s): photo 3	

NEST DISCIPTION:		
SPECIES: American Wigeon		NEST CLASSIFICATION (ACTIVE, SUSPECT, SUSPECT AREA): Active
PROTECTION ZONE: N/A		
NEST TYPE (E.G., CUP, CAVITY, DEPRESSION): Cup		VEGETATION TYPE (E.G., GRASS, TREE, SHRUB, BARE GROUND): Grass under sagebrush.
EGGS PRESENT (Y/N): Yes - 9	NUMBER: 9 eggs	COLOR: Light Cream/tan
YOUNG PRESENT (Y/N): N	NUMBER: N/A	FLEDGED (Y/N): N
FOLLOW UP REQUIRED (Y/N): N		CLIENT CONTACTED: N/A
SKETCH: 		

COMMENTS: Flushed hen wigeon from nest. 9 eggs present. Female returned to nest approx. 20 min later. Nest was under sagebrush plant in grass. Nest was approx. 50 feet from edge of water.
--

MIGRATORY BIRD NEST SURVEY FORM

PROJECT NUMBER:

203711357

DATE: 6-5-19	CLIENT/PROJECT NAME: J.R. Simplot, Smoky Canyon Mine – Tailings Ponds Bird Survey
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INVESTIGATORS: M. Brekke D. Kirkhart	UTM COORDINATES (ZONE 12)	
	EASTING 492933	NORTHING 4729149
LOGBOOK PAGE No's: Page 2	PHOTO ID(s): Photo 4	

NEST DISCIPTION:		
SPECIES: Mallard	NEST CLASSIFICATION (ACTIVE, SUSPECT, SUSPECT AREA): Active	
PROTECTION ZONE: N/A		
NEST TYPE (E.G., CUP, CAVITY, DEPRESSION): Cup	VEGETATION TYPE (E.G., GRASS, TREE, SHRUB, BARE GROUND): Grass	
EGGS PRESENT (Y/N): Y	NUMBER: 1 eggs	COLOR: Light Cream
YOUNG PRESENT (Y/N): N	NUMBER: N/A	FLEDGED (Y/N): N
FOLLOW UP REQUIRED (Y/N): No	CLIENT CONTACTED: N/A	
NAME:		
SKETCH:		
COMMENTS: Flushed hen mallard from nest. 1 egg present. Nest was located in bunchgrass clump on north dam of Tailings Pond 1. Nest was approx. 14 feet from edge of water.		

MIGRATORY BIRD NEST SURVEY FORM

PROJECT NUMBER:

203711357

DATE: 6-5-19	CLIENT/PROJECT NAME: J.R. Simplot, Smoky Canyon Mine – Tailings Ponds Bird Survey
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INVESTIGATORS: M. BREKKE D. KIKKERST	UTM COORDINATES (ZONE 12)	
	EASTING 493082	NORTHING 4729715
LOGBOOK PAGE No's: PAGE 2	PHOTO ID(s): photo 5	

NEST DISCRPTION:			
SPECIES: CANADA GEESE		NEST CLASSIFICATION (ACTIVE, SUSPECT, SUSPECT AREA): INACTIVE - EGGS HATCHED	
PROTECTION ZONE: N/A			
NEST TYPE (E.G., CUP, CAVITY, DEPRESSION): CUP		VEGETATION TYPE (E.G., GRASS, TREE, SHRUB, BARE GROUND): GRASS UNDER SAGEBRUSH	
EGGS PRESENT (Y/N): Y	NUMBER: 3-4 (HATCHED / FRAGS)	COLOR: WHITE	
YOUNG PRESENT (Y/N): N	NUMBER: N/A	FLEDGED (Y/N): Y	
FOLLOW UP REQUIRED (Y/N): N		CLIENT CONTACTED: NAME: N/A	
SKETCH:			
COMMENTS: EGG FRAGMENTS NOTED IN SEVERAL PLACES ON THE GROUND. ONE SMALL DISTURBED NEST CONSISTING OF A GRASS LINED DEPRESSION WAS PRESENT ON ONE EDGE OF THE AREA CONTAINING THE FRAGMENTS			

MIGRATORY BIRD NEST SURVEY FORM

PROJECT NUMBER:

203711357

DATE: 6-5-19	CLIENT/PROJECT NAME: J.R. Simplot, Smoky Canyon Mine – Tailings Ponds Bird Survey
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INVESTIGATORS: M. BREKKE D. KIKKEET	UTM COORDINATES (ZONE 12)	
	EASTING 493121	NORTHING 4729781
LOGBOOK PAGE No's: PAGE 2	PHOTO ID(s): Photo 6	

NEST DISCIPTION:		
SPECIES: CANADA GEESSE		NEST CLASSIFICATION (ACTIVE, SUSPECT, SUSPECT AREA): SUSPECT
PROTECTION ZONE:		
NEST TYPE (E.G., CUP, CAVITY, DEPRESSION): CUP		VEGETATION TYPE (E.G., GRASS, TREE, SHRUB, BARE GROUND): GRASS
EGGS PRESENT (Y/N): N	NUMBER: N/A	COLOR: N/A
YOUNG PRESENT (Y/N): N	NUMBER: N/A	FLEDGED (Y/N): N/A
FOLLOW UP REQUIRED (Y/N): N		CLIENT CONTACTED: NAME: NA
SKETCH: 		

COMMENTS:

GRASS LINED DEPRESSION. FEATHERS WERE PRESENT IN THE NEST, BUT IT WAS DIFFICULT TO TELL IF THEY WERE FROM THIS SEASON OR LAST. NO EGG FRAGMENTS PRESENT.